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SHELLFISH SURVEY OF CASTLEMAINE HARBOUR (CROMANE).

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SHELLFISH SURVEY OF CASTLEMAINE HARBOUR AND THE INNER PART OF DINGLE BAY.

Castlemaine Harbour has the oldest mussel fishery in Ireland and the only mussel purification tank to date (capacity 360 tons per month built in 1941) is operated in that area. The monthly landings and their values since 1966 are given in Table 1. Recently Castlemaine Harbour has shown a sustained annual growth in mussel landings. In September 1972 a survey was carried out in Castlemaine Harbour and the inner part of Dingle Bay to estimate the total quantity of available commercial shellfish (See Fig. 1).

There are about 6,840 acres in Castlemaine Harbour inside a straight line drawn from Inch Point to the old Coastguard Station at Cromane. About 2,000 of these are sub-littoral and the rest consist of about 1,800 acres of sand (which is less suitable for shellfish farming). A further 2,240 acres of mud and sandy mud at Banc Fluic are suitable for shellfish cultivation. There are a further 880 acres suitable for cockle cultivation outside these boundaries in Glenbeigh Strand known locally as the Cockle Strand.

RESULTS:

In the Castlemaine Harbour intertidal zone there are about 1,200 tons of mussels at an average density of 84 tons to the acre. These mussels are to be found at six different locations indicated in Fig. 1. Table 1 gives details of the approximate quantity available and the area covered, the separate and total tonnage available and their densities.

The length distribution of these mussels is shown in Table 11 which indicates that a number of year classes from 0 group upwards are present in most areas, Capín na Badgear and Crow Point being the exception with no juvenile mussels. It will be seen that Banc Fluic has the largest quantity of mussels and that 79% of these mussels are below the acceptable commercial length (50 mm.).

Table 111 shows that if these mussels are culled, the meat yield of these culled mussels over 50 mm. would be acceptable. The shell weight indicates however that they are old mussels.

The sublittoral area of Castlemaine Harbour has been dredged for mussels for over 50 years. It has a viable and expanding mussel industry. Since 1967 over 7,000 tons of mussels were landed in Cromane from the sublittoral areas of Castlemaine Harbour (Table IV). During these years also over 7,000 tons of mussels were transplanted from the intertidal zones to the deeper waters of the sublittoral zones. This is an indication of the large quantities available when proper mussel farming methods were adopted in the area. It must be assumed therefore that very large quantities of sublittoral mussels are available for harvesting, the assumption being based on the fact that there should be at least a four to one gross return on transplanted mussels. All length group were transplanted from the intertidal zone to the sublittoral zone.

The Cockle Strand in Glenbeigh and Banc Fluic in Castlemaine Harbour were also surveyed for cockles.

Banc Fluic had 26 cockles per m^2. The average number per kilogram was 45. The percentage meat yield was 14% and the length group distribution shows that 70% of cockles were over 4 years and that year classes from 0 upwards were present (see Tables VI and VII).

The Cockle Strand in Glenbeigh had 59 cockles per m^2. The average number per kilogram was 59 and the average meat yield was 15% The age group distribution indicates that all the year classes up to 4 years were present. The length distributions of these cockles show that 45% were over 30 mm (see tables V, VI and VII).

CONCLUSIONS:

This survey has revealed that the intertidal areas have some 1,200 tons of mussels at a density of 84 tons per acre fit for transplanting. The sublittoral area has very large quantities of transplanted mussels. It is difficult to estimate the quantity but they must be in excess of 8,000 tons.

The cockles are scarce but the quality is good and each acre at Glenbeigh and Banc Fluic had approximately 4 tons of cockles. There is no legal size limit for fishing cockles. In some locations in England the legal size is $\frac{3}{4}$" (18 mm).

There might well be a potential for mechanical dredging of cockles in this area(average landed price in England and Wales is ca £33 per ton) (Franklin 1972)

SUMMARY:

1. The intertidal area in Castlemaine Harbour and the inner part of Dingle Bay have large quantities of mussels and cockles.

2. The sublittoral areas of Castlemaine Harbour have been transplanted with mussels each year from 1967 to 1972 inclusive.

3. The annual landings of mussels are increasing.

4. To sustain the growth of the mussel fishery biological records must be kept of all future spat falls.

5. Mussels must be transplanted in future years based on stocks of one and two years of age.

Reference.

Franklin A (1972), The Cockle and its Fisheries.

Table 1. Intertidal Mussels in Cromane

HARBOUR: Castlemaine.

Location	Total acreage	Total tonnage	Density in Tons per acre
Banc Fluic (Wet Bank)	9.0	992.8	110.3
Capín Bán (White Bank Cap)	0.2	25.53	127.65
Drcicead Iariann (Ironbridge)	4.3	115.0	26.7
Capín na Badger (Badger's Cap)	.01	1.3	130.0
Crow Head	.5	53.0	106.0
Glenbeigh Strand (Cockle Strand)	.1	8.0	80.0
Grand Total	14.1	1195.6	84.8

Table 11. Length Distribution of Mussels expressed as percentages in 5 mm blocks

Location	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79
Banc Fluic (Wet Bark)		3	3	9	11	9	15	9	11	9	9	10	2			
Banc Bán (White Bank)	2	12	13	14	8	6	4	6	7	8	5	4	5	3	3	
Drcicead Iarainn (Ironbridge)	6	8	3	4	4	2	5	8	19	24	11	6				
Capín na Badger (Badger's Cap)											10	10	35	25	14	
Crow Head											15	40	10	30	5	
Cockle Strand (Glenbeigh)		10	14	12	14	10	18	8	10	4						

Table III - Average percentage Meat, Shell and Loss of Marketable Mussels together with average No. per Kg.

Location	% Meat	% Shell	% Loss	Average number per Kg.
Banc Fluic (Wet Bank)	18.5	45.4	36.1	28
Banc Bán (White Bank)	18.0	44.4	37.6	27
Droicead Iarainn (Iron Bridge)	16.0	45.4	38.6	24
Capín Badger (Badger's Cap)	15.6	45.4	39.0	22

Table IV - Landings of Mussels at Cromane expressed in Tons and their value, for each month and the total weight and their value for each year since January 1966.

Month	1966		1967		1968	
	Tons	£	Tons	£	Tons	£
Jan.	115.2	1,152	41.8	250	179.1	1,433
Feb.	42.5	426	36.5	219	231.2	1,618
Mar.					218.95	1,533
Apr.					81.55	815
May						
June						
July						
Aug.						
Sept.			33.4	200	30.9	309
Oct.	46.7	469	86.1	861	235.0	2,350
Nov.	67.6	405	150.0	900	238.1	2,381
Dec.	35.2	212	256.1	1,787	146.0	1,606
Total	307.2	1,664	604.0	4,217	1,360.8	12,045

Month	1969		1970		1971	
	Tons	£	Tons	£	Tons	£
Jan.	267.5	2,672	229.2	2,292	600	7,200
Feb.	250.0	2,750	227.6	2,276	600	7,200
Mar.	304.5	3,350	190.5	2,095	500	6,000
Apr.			33.75	472	46	560
May	28.55	285				
June						
July						
Aug						
Sept.	63.25	759	36.0	432		
Oct.	203.35	2,440	464.65	5,575	140	1,680
Nov.	269.4	3,233	263.6	3,113	200	2,400
Dec.	124.15	1,241			230	2,760
Total	1,510.70	16,730	1,445.3	16,255	2,316	27,800

Table V - Average number of Cockles (a) per square metre, (b) per kg. together with average percentage meat yield.

Location	Average No. per sq. metre	Average No. per Kg.	Average percentage meat yield
Banc Fluic	26.0	45	14.0
Glenbeigh Strand	46.0	59	15.0

Table VI - Age distribution of Cockles expressed in percentages.

Location	0+	1+	2+	3+	4+	5+	6+
Banc Fluic	3	13	3	11	20	28	22
Glenbeigh Strand	15	18	12	30	35		

Table VII - Length Distribution of cockles in 5mm intervals expressed in percentages.

Location	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Banc Fluic	2	14	5	9	15	23	32	10
Glenbeigh Strand	14	10	10	15	17	10	18	

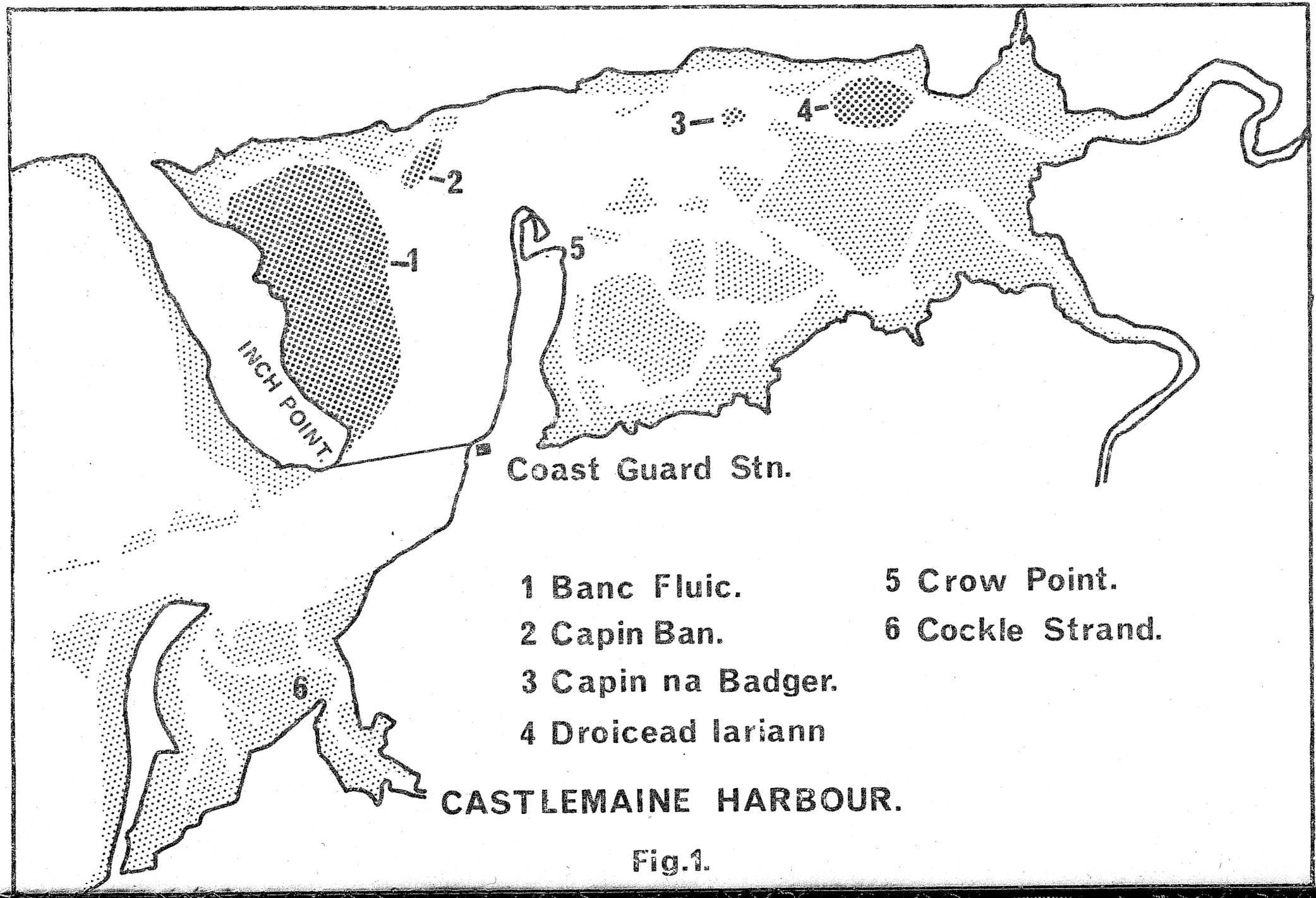
3
4
2
1
5
INCH POINT.
Coast Guard Stn.
1 Banc Fluic.
2 Capin Ban.
3 Capin na Badger.
4 Droicead Iariann
5 Crow Point.
6 Cockle Strand.
6
CASTLEMAINE HARBOUR.

Fig.1.